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COMPLETE SPECIFICATION.

Improvements in the Preparation or Treatment of Beer, and of an Extract of Malt to be used therefor.

A communication by Jacob Uhlmann, of Fuerth, Bavaria, in the Empire of Germany, Merchant.

I, William Phillips Thompson, F.C.S., M.I.M.E., of the Agency for Foreign Patent Solicitors, 6 Lord Street, Liverpool, and 6, Bank Street, Manchester both in the County of Lancaster and 323 High Holborn, in the County of Middlesex Civil Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention is founded on the latest observations in the art of brewing, and has for its object to utilise the results of the same as regards the improvement of beer.

According to these observations, highly kiln dried, and more particularly coloured malt (the so called caramel or amber malt) contains a substance which is able to impart to the beer a particularly good flavour, retention of froth, and even increased keeping property. This substance, which is called maltodextrin or isomaltose, is formed by the action of diastase, that is to say, by the action of that ferment by means of which insoluble starch flour is converted into soluble products. This substance is formed even during the kiln drying process, but preferably during the process of roasting previously moistened malt, and it may be described as the bearer of the so called "roasting aroma."

If the saccharified malt, containing the maltodextrin or isomaltose, be, however, exposed to a strong action of the diastase or to an excess of diastase, such as takes place in the mashing process as usually performed, the maltodextrin or isomaltose is converted into another substance, namely, "maltose." This latter, however, easily ceases to ferment, and only possesses the hereinbefore described valuable properties of the maltodextrin (or isomaltose) to a considerably smaller extent.

It is evident, from this explanation, that the good qualities which are inherent in the saccharified coloured malt, in consequence of the large amount of maltodextrin or isomaltose which it contains, are either not at all utilised or only to a slight extent, if this malt be used in the usual manner, that is to say, if it be mixed with the malt used for beer brewing and mashed with this latter in the usual manner. The process forming the object of this application is, therefore, intended to enable saccharified colouring malt to be used so that the maltodextrin (isomaltose) contained in this malt is not lost or converted into maltose, but remains contained in its entirety in the beer.

In order to attain this object, the process, according to this invention, is carried out by producing, from the saccharified colouring malt, by a particular method, an unhopped and unfermented extract which contains in large quantities the pure maltodextrin or isomaltose. This extract is removed from the deleterious action of the diastase, namely, its conversion into maltose, by only being added to the beer or to the finished wort produced in the usual manner, and, in fact, in the case of the latter, in the hopping vessel where diastase is no longer present.

The good properties of maltodextrin (isomaltose) thus come into action, in other words, the beer is, by this substance, not only improved in flavour and frothiness, but also in keeping properties, as the maltodextrin or isomaltose does not easily cease fermenting. Further, the malt employed for producing the extract is utilised in such a way that it shares fully in the yield in proportion to the amount added.

[*Price* 8*d*.]

The following is the method of producing the extract rich in maltodextrin or isomaltose employed in the process hereinbefore described :—

The saccharinated roasted malt (caramel or amber malt) employed as raw material is mashed in a peculiar manner with a small addition of ordinary malt, and maintained then at a given temperature which is most favourable to the formation of maltodextrin (isomaltose), but does not allow of a strong diastase action, until no unconverted starch flour exists, that is to say, until complete saccharification has taken place. The temperature is generally about 49 to 52 degrees Réaumur, and it is of essential importance for the formation of the extract that this temperature be not essentially exceeded, as takes place and must take place in the usual brewing process (when the mashing takes place at about 62 degrees Réaumur) but that the mashing takes place also at this temperature.

The unhopped and unfermented wort produced in this manner may, as before stated, be directly added to the beer or the beer wort in the hopping vessel, or, in order to allow of its being conveniently transported, it may be suitably condensed and used in this condition.

Having now particularly described and ascertained the nature of the said invention, and in what manner the same is to be performed, as communicated to me by my foreign correspondent, I declare that what I claim is :—

1. A process for improving beer by means of saccharified colouring malt characterised by the addition of an extract of such malt which is rich in maltodextrin or isomaltose to the finished beer, or to the beer wort produced in the usual manner, only in the hopping vat, and thereby removing such extract from the converting action of the diastase.

2. A process for making the malt extract, rich in maltodextrin (isomaltose) specified in Claim 1, consisting in mashing the saccharified colouring malt employed, at a temperature of about 10 degrees below the usual mashing temperature, which is the one most favourable to the formation of maltodextrin (isomaltose) and concentrating the wort thus produced to the requisite consistency.

Dated this 6th day of March 1893.

WM. P. THOMPSON & Co.,
Agents for the Applicant.

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